REMARKS

In response to the Office Action mailed July 8, 2010, the present application has been carefully reviewed and amended. Entry of the present Amendment and reconsideration of the application are respectfully requested.

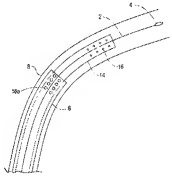
By this Amendment, Claims 14, 29, and 30 have been amended, and new Claim 31 has been added. Accordingly, Claims 14, 16-22, and 28-31 are currently pending in this application, and no new matter has been added by this Amendment.

In the current Office Action, Claims 29 was rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,089,103 to Smith ("Smith '103"), Claims 14, 17, 19, 20, 28, and 30 were rejected under 35 U.S.C. §103(a) as being unpatentable over Smith '103 in view of U.S. Patent No. 6,343,514 to Smith ("Smith '514"), and Claims 16 and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Smith '103 in view of Smith '514 and further in view of U.S. Patent No. 5,221,256 to Mahurkar ("Mahurkar").

Applicants respectfully traverse the rejection of independent Claim 29 as being anticipated by Smith '103. Smith '103 does not disclose or suggest, for example, among other things, sensing an indicator at a location that is proximal to a terminal port and distal to an injection port, as required by amended independent Claim 29.

Instead, Smith '103 teaches a guide catheter 6, an optional auxiliary catheter 14, side holes 16a, 16 formed in the catheter 6 and in the auxiliary catheter 14, and a guide wire 2 having a sensor 4 disposed at its distal end.

FIG. 3



When a thermodilution measurement is to be performed using the Smith '103 device, the guide catheter 6 is filled to the distal opening with cold saline, a small bolus amount of the saline is then injected into the guide catheter 6 at the proximal end, thereby expelling a corresponding amount of saline from the distal opening of the guide catheter 6 and from the side holes 16a, 16 into a blood vessel 8. When the saline passes a temperature sensor on the distal tip of the guide catheter 6, the temperature sensor registers a temperature gradient and a timer is initiated. When the injected bolus passes the sensor 4 at the distal tip of the guide wire 2, another temperature gradient is recorded and the system then calculates a flow parameter.

There is, however, no disclosure of sensing the temperature of the injected bolus at a location proximal to, for example, the distal opening of the catheter 6. Instead, as disclosed in Smith '103 and as seemingly acknowledged

by the current Office Action, the injected bolus is sensed by the sensor 4 distal to the distal end of the catheter 6 and auxiliary catheter 14.

Since Smith '103 does not disclose or suggest, among other things, sensing the indicator at a location that is proximal to the terminal port and distal to the injection port, Applicants respectfully traverse the rejection of independent Claim 29 as anticipated by Smith '103. Reconsideration is respectfully requested.

Applicants also respectfully traverse the rejection of independent Claims 14 and 30 as being obvious over Smith '103 in view of Smith '514. None of the applied prior art references disclose or suggest, among other things, calculating a blood flow rate as a function of less than a total volume of an indicator passed through an indicator lumen.

Instead, while Smith '103 contemplates injecting saline through both the distal opening of the guide catheter 6 and from the side holes 16a, 16, Smith '103 does not quantify or otherwise distinguish, for example, the amount of saline expelled through the distal opening from the amount of saline expelled through the side holes 16a, 16, in calculating the flow parameter. Thus, Smith '103 appears to calculate the flow parameter utilizing the entire volume of the injected bolus. As described in Smith '103, in a preferred embodiment, "the auxiliary catheter is provided with side hole 16 in the distal end, in order that the injection be similar to a "shower"." (Smith '103, col. 5, ll. 15-17.) There is

no disclosure in Smith '103 of distinguishing an amount of the injected bolus passing through the distal opening of the catheter from an amount being expelled by the side holes 16, 16a, nor is there any teaching in Smith '103 of calculating the described flow parameter as a function of anything less than the total volume of the injected bolus.

Contrary to the assertions in the present Office Action, Smith '514 does not cure these deficiencies. Instead, as taught in Smith '514 and as repeatedly acknowledged in the present Office Action, Smith '514 also teaches using the total volume of injected indicator to calculate the volume flow *Q* (*see*, for example, Smith '514, col. 7, ll. 20-44). Similar to Smith '103, Smith '514 provides no disclosure or suggestion of calculating a blood flow rate, or any other flow parameter, as a function of less than a total volume of the injected indicator.

Since neither of the applied prior art references disclose or suggest, among other things, calculating a blood flow rate as a function of less than a total volume of the indicator passed through the indicator lumen, Applicants respectfully traverse the rejection of independent Claims 14 and 30. Reconsideration is respectfully requested.

Claims 16-22, 28, and 30 depend directly or indirectly from independent Claim 14. Therefore, each of these dependent claims is allowable for at least the same reasons discussed above with regard to independent Claims 14 and

30. In addition, each of these dependent claims recites unique combinations that are neither taught nor suggested by the applied prior art, and therefore each is also separately patentable.

Applicants believe each of pending Claims 14, 16-22, and 28-31 are in condition for allowance. Should the Examiner consider that additional amendments are necessary to place this application in condition for allowance, the favor is requested of a telephone call to the undersigned for the purposes of discussing such amendments.

Please grant any extensions of time necessary for the filing of this Amendment. Please also charge any additional required fees due to our deposit account 03-3875.

Respectfully submitted,

Dated: November 4, 2010

Dominic P. Ciminello, Reg. No. 54,038
Harter Secrest & Emery LLP
1600 Bausch & Lomb Place
Rochester, New York 14604
Telephone: 585-232-6500
Fax: 585-232-2152